

# Notice of Allowability

Application No.

09/982,629

Examiner

Lyle A Alexander

Applicant(s)

BUECHLER, KENNETH F.

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1743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the 8/11/04 amendments/remarks and the subsequent 11/3/04 amendments.
2. ☒ The allowed claim(s) is/are 1,4-5,7-12,14 and 17-18 renumbered as 1-12 respectively.
3. ☒ The drawings filed on 18 October 2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All b) ☐ Some\* c) ☐ None of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 11/3/04
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Wilson on 11/3/04.

1. (Currently Amended) A method for regulating fluid flow in a device that conducts fluid through one or more capillary channels, comprising:  
  
introducing fluid into said device which comprises a capillary channel comprising (i) a first capillary region comprising a hydrophilic surface and(ii) a second capillary region comprising a hydrophobic surface adjacent to said first capillary region, and a third capillary region comprising a hydrophilic surface adjacent to said second capillary region, wherein said hydrophobic surface controls the rate of flow of said fluid into said third capillary region, whereby upon introduction of said fluid to said device, fluid flows through said first capillary region to contact said hydrophobic surface ~~without a requirement for further manipulation of the device~~ which delays fluid flow into said third capillary region until rendered hydrophilic.

2-3. (Cancelled)

4. (Original) The method of claim 1, wherein said device comprises a plurality of capillary channels, one or more of which comprise a region comprising a hydrophobic surface.

5. (Original) The method of ~~claim 2~~ claim 1, wherein said device further comprises a vent.

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6. (Cancelled)
7. (Previously pending) A method for regulating fluid flow in a device that conducts fluid through one or more capillary channels, comprising: contacting said fluid with one or more hydrophobic regions on a capillary surface that alter a rate or direction of said fluid flow within said device in comparison to a rate or direction of fluid flow within said device in the absence of said hydrophobic region, wherein said hydrophobic region retards fluid flow into a hydrophilic region until said hydrophobic region is rendered hydrophilic.
8. (Original) The method of claim 7, further comprising contacting said fluid with a first capillary region and a second capillary region adjacent to said first capillary region, wherein a difference in capillarity of said first capillary region compared to said second capillary region alters a rate or direction of said fluid flow within said device in comparison to the rate or direction of said fluid flow within said device in the absence of said difference in capillarity.
9. (Original) The method of claim 7, further comprising contacting said fluid with a reagent dried on a surface of the device, whereby said reagent dissolves into said fluid, thereby lowering the surface tension of said fluid.
10. (Original) The method of claim 7, wherein said device comprises a plurality of capillary channels.
11. (Original) The method of claim 7, wherein one or more of said hydrophobic regions are flanked by hydrophilic regions.
12. (Original) The method of claim 7, wherein at least one of said hydrophobic regions alter the rate of flow within said device.
13. (Cancelled).
14. (Currently Amended) A device that conducts fluid through one or more capillary channels, comprising: a capillary channel comprising (i) a first capillary region

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comprising a hydrophilic surface and (ii) a second capillary region comprising a hydrophobic surface adjacent to said first capillary region and a third capillary region comprising a hydrophilic surface adjacent to said second capillary region, wherein said hydrophobic surface controls the direction of flow of said fluid into said third capillary region, wherein said device is configured and arranged such that upon introduction of said fluid to said device, fluid flows through said first capillary region to contact said hydrophobic surface ~~without a requirement for further manipulation of the device~~.

15-16. (Cancelled)

17. (Currently Amended) The device of claim 14, further comprising a reagent dried on a surface of the device that, when dissolved ~~into reagent~~ dissolves into fluid within said device, lowers the surface tension of said fluid.

18. (Original) The device of claim 14, wherein said device comprises a plurality of capillary channels,

19-21. (Cancelled)

The following is an examiner's statement of reasons for allowance: The cited prior art fails to teach or anticipate a method and apparatus that has a hydrophobic surface that delays fluid flow until the surface is rendered hydrophilic by the sample permitting the sample to flow.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lyle A Alexander whose telephone number is 571-272-1254. The examiner can normally be reached on Monday, Wednesday and Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Lyle A Alexander  
Primary Examiner  
Art Unit 1743

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